

**ABSTRACT**

Apparatus for the precise positioning of a sample of dielectric material into a cavity resonator system for obtaining dielectric constant, and other measurements. Precision micrometer drive units are provided to move the sample about a vertical axis, to tilt the sample, and to move the sample in X, Y and Z directions. The drive units are positioned on a bearing slide for ease of sample positioning into and out of the cavity. Selected drive units are controllable from a remote location so that the apparatus may be utilized in an environmental chamber whereby measurements may be accomplished without opening the chamber after each measurement. All components of the resonator system, positioning units, cables, etc. are chosen such that they are operable over the desired temperature range of operation.